

**TGF- $\beta$  Receptor II (D3A1) Rabbit mAb**

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**For Research Use Only. Not for Use in Diagnostic Procedures.**

<b>Applications:</b> W, IP	<b>Reactivity:</b> H M R Mk	<b>Sensitivity:</b> Endogenous	<b>MW (kDa):</b> 70-80	<b>Source/Isotype:</b> Rabbit IgG	<b>UniProt ID:</b> #P37173	<b>Entrez-Gene Id:</b> 7048
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**Product Usage Information****Application**

Western Blotting  
Immunoprecipitation

**Dilution**

1:1000  
1:50

**Storage**

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100  $\mu$ g/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at  $-20^{\circ}\text{C}$ . Do not aliquot the antibody.

**Specificity/Sensitivity**

TGF- $\beta$  Receptor II (D3A1) Rabbit mAb recognizes endogenous levels of total TGF- $\beta$  receptor II protein. This antibody also cross-reacts with a protein of unknown origin at 120 kDa in some cell lines.

**Source / Purification**

Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding Pro107 of human TGF- $\beta$  receptor II protein.

**Background**

Transforming growth factor- $\beta$  (TGF- $\beta$ ) proteins belong to the TGF- $\beta$  superfamily of cytokines that play a critical role in regulating cell proliferation and differentiation, developmental patterning and morphogenesis, and disease pathogenesis (1-3). TGF- $\beta$  ligands elicit signaling through three cell surface receptors: type I (RI), type II (RII), and type III (RIII) TGF- $\beta$  receptors. Type I and type II receptors are serine/threonine kinases that form a heteromeric complex following ligand binding to the type II receptor. In response to ligand binding, the type II receptors form a stable complex with the type I receptors, triggering phosphorylation and activation of the type I receptor (4). This results in the recruitment of receptor-mediated SMADs (SMAD2, SMAD3), which are phosphorylated by the type I kinase in an SSXS domain in the C-terminus. This leads to recruitment of the co-SMAD (SMAD4), and subsequent translocation of this heteromeric SMAD complex to the nucleus, where it regulates transcription of target genes (5-7). The type III receptor, also known as betaglycan, is a transmembrane proteoglycan with a large extracellular domain that binds TGF- $\beta$  with high affinity but lacks a cytoplasmic signaling domain. Expression of the type III receptor can regulate TGF- $\beta$  signaling through presentation of the ligand to the signaling complex (8).

**Background References**

1. Massagué, J. et al. (2000) *Cell* 103, 295-309.
2. de Caestecker, M.P. et al. (2000) *J Natl Cancer Inst* 92, 1388-402.
3. Derynck, R. et al. (2001) *Nat Genet* 29, 117-29.
4. Derynck, R. and Feng, X.H. (1997) *Biochim Biophys Acta* 1333, F105-50.
5. Miyazono, K. et al. (2000) *Adv Immunol* 75, 115-57.
6. Massagué, J. (2000) *Nat Rev Mol Cell Biol* 1, 169-78.
7. Derynck, R. et al. (1998) *Cell* 95, 737-40.
8. López-Casillas, F. et al. (1991) *Cell* 67, 785-95.

**Species Reactivity**

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

**Western Blot Buffer**

**IMPORTANT:** For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at  $4^{\circ}\text{C}$  with gentle shaking, overnight.

**Applications Key**

**W:** Western Blotting **IP:** Immunoprecipitation

**Cross-Reactivity Key**

**H:** Human **M:** Mouse **R:** Rat **Mk:** Monkey

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